

A 1999 Survey of 25 Parcels of BLM land for

***Spiranthes diluvialis* (Ute-ladies tresses orchid) and *Guara neomexicana*
ssp. coloradensis (Colorado butterfly plant)**

Prepared for:

**Bureau of Land Management
Attention: Jeff Carroll, Botanist
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Photograph of *Spiranthes diluvialis* along Bear Creek, Goshen County Wyoming
(Taken on August 23, 1999)

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A 1999 Survey of 25 Parcels of BLM land for *Spiranthes diluvialis* (Ute-ladies tresses orchid) and *Guara neomexicana* ssp. *coloradensis* (Colorado butterfly plant)

Donald L. Hazlett

Summary

A field survey was done for 25 parcels of BLM land in southeastern Wyoming on August 23-26, 1999. These surveys found no plants of *Spiranthes diluvialis* and no plants of *Guara neomexicana*. The search parcels included areas that are designated for sale or exchange. These parcels are indicated on enclosed maps (provided by BLM personnel) and the exact locations are in the Appendix (Table 1). Included in this report are 15 photographs of these parcels. Eighteen of the 25 parcels were extensively searched on foot, with no success at locating either target species. The 8 parcels that were not or that were incompletely searched were determined to have inappropriate habitat for the target species. Reasons for partial or no searches for 8 areas was a determination by the author (such as the presence of a dry creek beds, surveys of nearby areas and previous unsuccessful surveys of these areas) that these parcels did not have suitable habitat for the target species.

Background

The Ute ladies'-tresses orchid (*Spiranthes diluvialis*) was first described as a species in 1984 (Sheviak). From 1984 until 1992 field and herbarium studies determined that this infrequent orchid was known from only 11 populations in three states (Colorado, Utah and Nevada). For this reason the Ute ladies'-tresses orchid was listed as a threatened plant species on January 17, 1992 (57 FR 2053). This listing was under the authority of the Endangered Species Act (1973) as amended by the U.S. Fish and Wildlife Service (1992).

A consequence of listing this plant species as threatened was that much more effort was made by botanists and field biologists to search for additional populations of the Ute ladies'-tresses orchid. Much of the effort to search for this rare orchid in Wyoming has been due to funding by the the Bureau of Land Management, Wyoming State Office. Since 1996 two new populations of this orchid in Wyoming and one population in Nebraska were discovered during BLM funded field survey work.

The result of the Wyoming surveys and of field surveys in other western states since 1992 was that 21 additional populations of Ute ladies'-tresses orchid were discovered. These additional populations include eight new locations in Utah, six in Montana, four in Wyoming, three in Idaho, two in Colorado, one in Nebraska and one in Washington. These recently discovered populations increased the number of known locations for this orchid from 11 in 1992 to 32 populations in 1998.

The four known populations of *Spiranthes diluvialis* in Wyoming are along Bear Creek (Goshen County), along Antelope Creek (Converse County) along the Niobrara River near McMasters Reservoir (Niobrara County), and along Sprager Creek (Laramie County). The Bear and Antelope Creek populations were discovered by Burrell E. Nelson, herbarium manager, at the Rocky Mountain Herbarium, University of Wyoming, Laramie, Wyoming. The Niobrara River and Sprager Creek populations were discovered by Hazlett (1996, 1997).

As more locations of this orchid are discovered (on public and private land) the chances for long-term survival of this species increases. Although none of the known locations for *Spiranthes diluvialis* in Wyoming are on land administered by the Bureau of Land Management or on other federal lands, there are still many riparian areas near known locations of this orchid that have not yet been surveyed. It is important to continue to search likely locations in southeastern Wyoming for this endangered plant species.

On March 24, 1998, the Colorado butterfly plant (*Guara neomexicana* ssp. *coloradensis*) was proposed for listing as a threatened plant species under the Endangered Species Act (U.S. Fish and Wildlife Service, 1998). Although no decision has yet been made on this proposal (as of August, 1999) the U.S. Fish and Wildlife Service is still attempting to officially list this plant taxon as threatened. A decision to publish this taxon in the Federal Register as "threatened" could be made by the end of 1999. Meanwhile, the protection status assigned to this plant by the U.S. Fish and Wildlife Service from 1980 to present has been as a "Category 1" and as a candidate for listing. The U.S. Forest Service Region II designates the Colorado Butterfly Plant as "sensitive". If the federal status of the Colorado butterfly plant is upgraded to "threatened", there is a good chance that the Forest Service designation will also be upgraded.

In 1998 Fertig (1998) did an excellent review of available information regarding the geographic range, habitat and the number of Colorado butterfly plants. It occurs only in Wyoming and Colorado. He revisited 14 of 26 known locations for this plant in 1998 and estimated a total of 41,418 reproductive individuals. When estimates of the numbers of reproductive individuals from the 12 sites that were not visited are added to this tally, the estimate of reproductive Colorado butterfly plants (over the entire range) is 47,100- 50,300 individuals.

Objective

The objective of this 1999 search is to continue to search public land areas for *Spiranthes diluvialis* and for *Guara neomexicana* ssp. *coloradensis* (Colorado butterfly plant).

Methods

An effort was made to survey each of the 25 designated parcels (Table 1). Prior to entering an area, the landowner was called (usually in the evening before the visit) to secure permission to enter this property. Not once was permission denied. However, there were several occasions when landowner could not be contacted by telephone. After permission was secured, the riparian areas of each parcel were searched on foot for the two target species.

Results

Enclosed are the 6 BLM maps that are marked with the exact locations of the survey parcels. Presented here are brief discussions of each parcel area, photographs and comments about the the creeks and riparian areas that occur in these parcels.



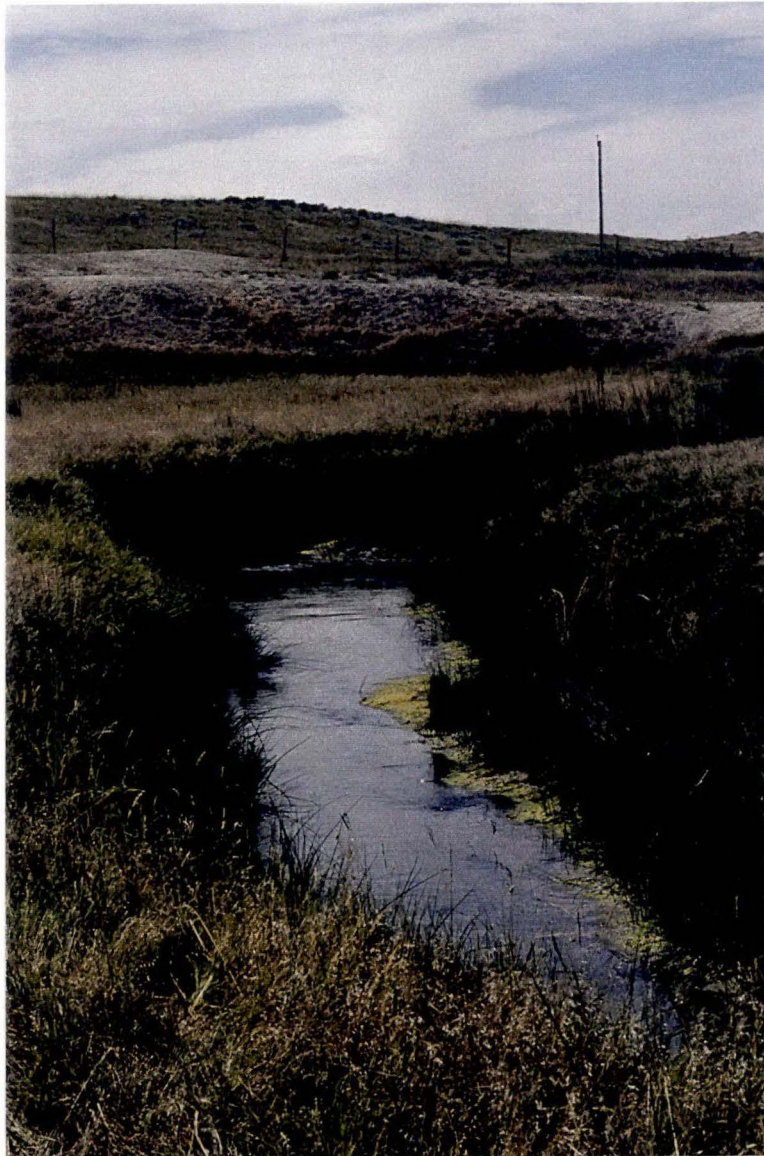
Parcel 1/ Figure 1. View of the channeled Curty Run toward the south. This 40 acre parcel of BLM land in Goshen County (Curty Run) was surveyed on August 23. The result was that neither rare plant was discovered. This was a reasonable location to search, since it is within a mile of a known location of *Spiranthes diluvialis* along Bear Creek. A complete tally of *Spiranthes diluvialis* at the Bear Creek location was not made, but a partial survey tallied 20 plants. The cover photograph was taken at this creek on this date, evidence that this was a good time of year to search for this orchid. This photograph of Curty Run shows the channeled nature of this Bear Creek tributary, shows *Phalaroides arundinacea* (reed canarygrass) and *Glycyrrhiza lepidota* (wild licorice). There is no oxbow flooding to create orchid habitat.



Parcel 2 / Figure 2. This parcel of BLM land in Goshen County, along Horse Creek, was surveyed on August 25. The result was that neither rare plant was discovered. This section of Horse Creek has many *Elaeagnus angustifolia* (Russian olive) and occasional *Populus deltoides* (cottonwood) trees. The weedy *Trifolium fragiferum* (strawberry clover), *Sporobolus airoides* (alkali sacaton) and *Spartina gracilis* (small cordgrass) were present along this alkaline portion of Horse Creek.



Parcel 3 / Figures 3 & 4. This parcel of BLM land in Platte County is in a seep area of the North Laramie Canal. This narrow, channeled canal (upper photograph) gets water from the North Laramie River. This area was surveyed on August 24 and no target plant species were discovered. In a previous year the nearby Dry Laramie River was surveyed (no orchids), but both the nearby Dry Laramie River and this Canal were potential habitat for this orchid. The seep area of the Laramie Canal (lower photograph) is also the headwaters of a small tributary to the North Laramie River. Noteworthy riparian plant species seen here were *Lobelia siphilitica* (blue cardinal flower), *Sorghastrum nutans* (Indian grass), and *Triglochin maritima* (arrowgrass).



Parcel 4 / Figure 5. This parcel of BLM land in Goshen County, along Horse Creek, was surveyed on August 25. The result was that neither rare plant was discovered. Sections of this creek were grazed, but there were several cattle exclosures with elevated tire stands, apparently built as waterfowl nesting sites. Like the more downstream Parcel 2, this parcel was also on alkaline soil with *Scirpus pungen* (threesquare) as the dominant (essentially the only) riparian plant near the creek. Further away from the creek was frequent patches of the planted *Thinopyrum ponticum* (tall wheatgrass) and *Muhlenbergia asperifolia* (scratchgrass). Further up on the floodplain were extensive areas of *Distichlis spicata* (salt grass).



Parcel 5 / Figure 6. This riparian parcel along Marble Quarry Creek in Platte County was surveyed on August 24. The result was that neither rare plant was discovered. This creek is near an active Marble quarry (visible in the background). The area is heavily grazed with *Carex nebrascensis* (Nebraska sedge) abundant, but heavily grazed. Also present along this alkaline creek was *Sporobolus airoides* (Alkali sacaton) and the exotic and toxic *Hyoscyamus niger* (henbane).

Parcel 6. This parcel of BLM land in Converse County was not resurveyed in 1999. The reason for this is that I surveyed this and other nearby portions of La Prele Creek in 1998. In 1999 no *Spiranthes diluvialis* plants were discovered along La Perle Creek.

Parcel 7. This parcel of BLM land in Converse County was surveyed on August 24. The result was that neither rare plant was discovered. This is a limestone ridge area with *Pinus ponderosa* and *Juniperous scoloporum* trees, inappropriate habitat for these two rare plants. Access to this parcel is difficult.

Parcel 8. This parcel of BLM land in Converse County was surveyed only from a distance. Despite numerous telephone calls, permission to enter this area was not secured. However, a survey of the surrounding areas led me to suspect that this was not appropriate habitat for either of the target rare plant species.



Parcels 9, 10 and 11 / Figure 7. These parcels of BLM land in Converse County were surveyed on August 24. The result was that neither rare plant was discovered. These three parcels (and parcel 7) are in pine/juniper forests along an escarpment. One isolated patch of cattails (see the center of this photograph) was discovered in parcel 9. In general, the rocky soils and drainages in this area were not appropriate habitat for either of the two target plant species.



Parcel 12 / Figure 8. This parcel of BLM land in Platte County (along Chugwater Creek) that is near the power plant was surveyed on August 25. The result was that neither rare plant was discovered. An irrigation ditch leaves the east side of this Creek near the BLM land. The creek is channeled with box elder, cottonwood and sandbar willow tress (see photograph). An alkali meadow to the east has *Sporobolus airoides* (alkali sacaton), *Distichlis* (salt grass), *Phalaroides arundinacea* (canaryreed grass) and *Equisetum spp* (horsetails). Weedy species in this area include *Cichorium intybus* (chicory) and *Coronilla varia* (crown vetch).

Parcel 13. This parcel of BLM land along the Platte County and Albany County line was surveyed on August 25. The result was that neither rare plant was discovered. This is ponderosa pine/juniper forest with a mixture of granite and limestone parent materials. The rocky knolls and ravines had a few wetland species, but no flooded oxbows were present that could create appropriate habitat for Ute-ladies tresses orchid.



Parcel 14 / Figure 9. These 3 parcels of BLM land (in Platte County) were surveyed on August 24. The result was that neither rare plant was discovered. The sections of area 14 that is in sections 30 and 31 is a dry creek bed. The other sections of this parcel are along the Laramie River. This river has a broad floodplain with many cottonwood and Russian olive trees. There are a lot of old, fallen cottonwoods near the river. In general, this was inappropriate habitat for the target species.



Parcel 15 / Figure 10. This parcel of BLM land (in Platte County) along the Laramie River was surveyed on August 24. The result was that neither rare plant was discovered. This area did have potential *Spiranthes diluvialis* habitat, since it is mown for grass hay. However, a dominant grass in this mix was *Spartina pectinata* (prairie cordgrass), a species that has nowhere been a dominant grass species of a *Spiranthes* population.



Parcel 16 / Figure 11. This parcel of BLM land in Goshen County was surveyed on August 25. The result was that neither rare plant was discovered. This area known as the Arnold Drain is a tributary to the North Platte Ditch. This is an area of sandy soils with abundant *Cenchrus* (sandbur), *Artemisia filifolia* (sand sage), *Calamovilfa longifolia* (prairie sandreed) and *Opuntia fragilis* (jumping cactus). The riparian plants include large patches of *Typha* sp. (cattails), but the deeply channeled nature of this creek did not allow for ox-bows that could create possible *Spiranthes* habitat. The photograph to the left is north of the dam and the photograph to the right is south of the dam (near the road).



Parcel 17 / Figure 12. This parcel of BLM land on along the Laramie River in Platte County was surveyed on August 23. The caretaker of this land (Juan Peralta) was not located, but conversations with local residents confirmed (as the map suggests) that there is no riparian area within this BLM parcel of land. The steep cliffs of the north bank of the Laramie River (in background of the photograph) border this parcel. The foreground is potential habitat, but no target species were located in this area.

Parcel 18. This portion of Mule Creek in Platte County has box elder and peachleaf willows, but does not have likely habitat for the *Spiranthes* orchid. The landowner of this private area near this parcel could not be contacted. Therefore, no foot survey was done for this area. However, a foot survey of more northern areas of Mule Creek on August 23 (within 1 mile of the parcel) suggested that this parcel did not have potential habitat for either rare plant.



Parcel 19 / Figure 13. This is a photograph of a section of Deadhead Creek in Platte County was surveyed on August 23. The Mule Creek portion was deemed inappropriate habitat (see discussion under parcel 18) looked very similar. Other Deadhead Creek portions also had densely wooded borders with box elder and peachleaf willows. The creek was often shaded and had few oxbows that would create the necessary habitat for Ute-ladies tresses orchid. The result was that neither rare plant was discovered.



Parcel 20. This BLM parcel along Willow Creek is a dry creek bed. Definitely not appropriate habitat for either target species. On the ridge to the east is an active F.A.A. site. The result was that neither rare plant was discovered.



Parcel 21 / Figure 14. These BLM land areas in Platte County were surveyed on August 23. They are near the Diamond Guest Ranch, where permission was secured to search several of these location. Watersap Creek was heavily grazed and not target species were found. The parcel in section 25 was a dry creek bed in a ravine beneath large hillsides of *Cercocarpus montanus* (mountain mahogany). Permission was not secured to search Maxwell Creek locations, but interviews with local residents confirmed that this area was very similar to Watersap Creek. No target species were found in the areas searched and none were suspected to occur along Maxwell Creek.

Parcel 22. This parcel of BLM land (as the map suggests) does not have riparian area. However, similar, nearby sections of South Sybille Creek were surveyed on August 23. The result was that neither target plant species was discovered.

Parcels 23 and 24. These parcels of BLM land were not surveyed. It was not possible to secure permission from Robert Grant. However, a visual survey from a distance and a foot survey of nearby areas suggested that there is essentially no chance that potential habitat for the target species occurs in these areas.



Parcel 25 / Figure 15. This is a photograph of one of the most interesting BLM tracts that was searched. It is located in Platte County (see Table 1) in the west central portion of section 14. The interest was not because of a rare plant, none were found, but because this is the last stretch where Cottonwood Creek flows above ground. While in this BLM area the water enters a sinkhole (limestone) and creates a dry creek bed. New sinkholes are continually occurring.

When the landowner (Larry Gerke) was contacted, he requested to accompany me during the survey of this area. We did this survey together on August 25. When entering this ecotone in Platte County of ponderosa pine/juniper forest, it immediately appeared as if this was very inappropriate habitat for either target species. No target species were located. Of special interest was that Larry Gerke had a more recent land ownership map for this area. His map had different locations for several of the tracts of BLM land and for several tracts of private land than those indicated on the BLM 1997 map of the Laramie Peak area.

When the water goes underground it is unavailable for livestock. This was recognized in the 1930s and one of the C.C.C. (Civilian Conservation Corps) projects was to divert the water from Cottonwood Creek into a new channel before it disappeared underground. To do this a tunnel was built under a steep cliff of Cottonwood Creek and the water was diverted through the tunnel and into a deep man-made trench. The cement work that marks the entry to the still function C.C.C. tunnel (it needs to be cleaned out) still occurs on BLM land. In addition, the area is well managed and is in very good, natural condition. The owner should be complemented and encouraged in his plan to graze bison instead of cattle in this area.

Literature Cited

- Fertig, W. 1998. Status Review of the Colorado Butterfly Plant (*Guara neomexicana* spp. *coloradensis*. Wyoming Natural Diversity Database/The Nature Conservancy, 1604 Grand Ave., Laramie, WY 82070.
- Hazlett, D.L. 1997. A 1997 search for *Spiranthes diluvialis* in southeastern Wyoming and western Nebraska. Consultant Report, B.L.M. State Office, Cheyenne, WY. [12 pages]
- Hazlett, D.L. 1996. The discovery of *Spiranthes diluvialis* (Orchidaceae) in Nebraska. Consultant Report, B.L.M. State Office, Cheyenne, WY. [16 pages]

Appendix: Table 1.

The locations of the 25 BLM allotments that were searched for Ute-ladies tresses orchid and for the Colorado butterfly plant in August, 1999.

Order	Section	Owner	Contact	Phone	Notes
1	T19,R65,S24,NENW - Curly Run Creek	Bartlett Ranch-Wyoming L.L.C.	Jimmy Muse	307-834-2219	Ute-ladies tresses Colorado Butterfly Plant
2	T22,R61,S14- Horse Creek	Mayland Ranch	Colin P. Lindsey		Ute-ladies tresses Colorado Butterfly Plant
3	T25,R69,S5,SESW - seepage below canal	George E. Faris	George E. Faris	307-322-9591	Ute-ladies tresses Colorado Butterfly Plant
4	T22,R61,Secs23, 24,25 - Dry Creek	Table Mountain No. 3	Bruce Sedman	307-788-1390	Ute-ladies tresses Colorado Butterfly Plant
5	T24,R70,S2,N2SE- Marble Quarry Creek	UVA Ranch	Ervin L. Corl	307-322-2036	Ute-ladies tresses Colorado Butterfly Plant
6	T30,R74,S17,NWSW- LaPrele Creek	Powderhorn Ranch	Bill Odom	800-845-0421 ext.22	Ute-ladies tresses
7	T34,R68,S34,E2SE - unnamed drainage	Moser	Mikel A. Moser	307-358-6516	Ute-ladies tresses
8	T30,R69,S6,NESW - Indian Creek	Smith Sheep Company	Stephen J. smith	307-358-2531	Ute-ladies tresses
9	T33,R69,S25,NENE - M.F. of Shawnee Creek	Frank W. Henderson	Frank W. Henderson	307-358-2417	Ute-ladies tresses
10	T33,R68,S19,W2SE - M.F. of Shawnee Creek	Florence M. Eddy	Florence M. Eddy	307-358-3811	Ute-ladies tresses
11	T33,R69,S29,NENW - Trib to W.F. of Shawnee Creek	Donald and Donna York	Donald and Donna York	307-358-5170	Ute-ladies tresses
12	T25,R67,S26,SENE - Chugwater Creek	Zona Loomis	Zona Loomis	307-322-3386	Ute-ladies tresses Colorado Butterfly Plant
13	T28,R70,S32,NWSW - Crow Creek	Richard L. Peterson	Richard L. Peterson	307-358-2130	Ute-ladies tresses Colorado Butterfly Plant
14	T24,R69,S30,SESW T24,R69,S31,SESW T24,R70,S25,SENE T24,R70,S35,SWNE	P.E. Reitz Living Trust	P.E. Reitz	307-322-2910	Ute-ladies tresses Colorado Butterfly Plant
15	T24,R69,S17,SESE - Laramie River	Harry Kittell	Harry Kittell	307-322-3840	Ute-ladies tresses Colorado Butterfly Plant
16	T24,R61,S 1, - Arnold Drain	Donald E. Jones	Donald E. Jones	307-778-5335	Ute-ladies tresses Colorado Butterfly Plant
17	T25,R67,S24,NWSE - Laramie River	Criss Ranch	Bill Criss	307-322-3114	Ute-ladies tresses Colorado Butterfly Plant

18	T21,R70,S14,E2NW, NWNW - Mule Creek	Springfield Ranch, INC.	Ken small	307-322-2432	Ute-ladies tresses Colorado Butterfly Plant
19	T21,R69,S19,NWNW T21,R69,S30,SWNE- Deadhead Creek T21,R70,S14,NESW T21,R70,S23,S2NW T21,R70,S26,SENW - Mule Creek	JY Ranch, INC.	Larry Rosentretar	307-322-3286	Ute-ladies tresses Colorado Butterfly Plant
20	T30,R65,S12,N2NE - Willow Creek	Blackmore Ranch CO.	John Fahy		Ute-ladies tresses
21	T21,R68,S18,SENW, N2SW T22,R71,S31,SESE T21,R69,S11- 14,25-27	Ruth Braunsweig	Ruth Braunsweig	307-422-3508	Ute-ladies tresses Colorado Butterfly Plant
22	T21,R71,S25,NESE - S. Sybille Creek	John C. Dilts	John C. Dilts	307-358-4867	Ute-ladies tresses
23	T21,R68,S 8,W2NW - Trib to N. Richeau Creek	James Irvine	James Irvine	307-322-2468	Ute-ladies tresses
24	T21,R68,S 5, - N. Richeau Creek	Robert Grant	Robert Grant	307-322-2923	Ute-ladies tresses Colorado Butterfly Plant
25	T27,R70,S10,NESW - Dagley Creek T27,R70,S14,SWNW -Cottonwood Creek T27,R70,S20,NWSW - Preacher Creek T27,R70,S28,NWNE - Trib to Fish Creek	Twin Pine Ranch	Peggy H. Gerke	307-322-2485	Ute-ladies tresses Colorado Butterfly Plant